

Subscription costs, exchange rates, and cost/page/impact factor data for selected organic and inorganic chemistry journals.

Dana L. Roth

Millikan Library / Caltech 1-32

1200 E. California Blvd. Pasadena, CA 91125

626-395-6423 fax 626-792-7540

[dzrlib@library.caltech.edu](mailto:dzrlib@library.caltech.edu)

Library staff have been working with the Caltech administration, for quite a number of years, trying to help them understand the 'Serials Crisis', and encouraging them to make some allowances when the serials budget came up short. This was only partially successful and, like most other schools, we routinely raided the book and bindery budgets to make ends meet. One glimmer of hope came in the mid-1980s, when we were allowed to carry \$35K forward from a year when the US\$ was very strong into the next year when it weakened. This was only possible, however, because the Institute's treasurer understood the effects of foreign currency exchange rates, and had been purchasing DM future contracts that resulted in a very positive increase in Caltech's endowment.

Fortunately, Caltech's new Provost in 1995 must also have been thinking about this problem, since he immediately insisted on comprehensive review of all our journal subscriptions and, for subsequent reviews each year in the future, based on local cost/use data. His 'stick' required faculty members to 'sign in blood' that their journal renewal requests for 1996 were absolutely 'must-have' requirements for their research programs. The 'carrot' was that his office would supplement the library's serials budget, each year, to cover both the base cost increase, and the cost of any new titles, that again were absolutely required by at least one faculty member for their research. This novel approach resulted in some significant cancellations for 1996, and a few each year afterwards, but it certainly made life much easier for the library staff.

Well, like all things that sound too good to be true, this approach obviously couldn't go on forever, especially with ~ 10% increases each year, which essentially doubled our serials budget between 1996 and 2004. When Caltech got a new Provost in 2004, the library was quickly told that we would have a 'flat' serials budget for 2005. Fortunately, I had been sending out comparisons of society and commercial journal subscription prices for a number of years to the chemistry faculty, in anticipation of this day of reckoning.

For example, in 2002, I sent out this comparison (1) which resulted in a number of people shaking their heads and being thankful that it wasn't their problem. Several found it interesting, however, that our whole RSC package, that year, was priced less than the J. Molecular Structure/TheoChem combination.

In 2003, I pointed out that there seemed to be some 'exchange rate profiteering' on the part of some European commercial publishers(2), but again since there wasn't a big push for cancellations, it was noted, but not acted on. This apparent 'profiteering' seemed to result from the fact that US\$ subscription prices were arbitrarily set, rather than being based on the EURO or Guilder exchange rate, as they had been in the past.

In late summer 2004, with the 2005 prices in hand, and with the charge from the new Provost to come up with a flat serials budget, I prepared a 5 year price comparison(3), but quickly realized that it would not give an accurate or particularly useful picture.

I expanded my analysis to cost/page and cost/page/impact factor(4), for 2000-2004, and finally got some faculty attention. Please note that the subscription cost is the Institutional cost with standard online access, e.g. RSC - current+8 years, ACS - current+4 years, \*Elsevier - current rolling year, Synthesis/SynLett - current+3 years.

This new cost/page analysis tells a much more interesting story. In the first example, SynLett (published by Thieme Verlag, a privately held European commercial publisher) is actually more reasonable on a cost/page basis than Organic Letters published by the ACS. This, however, is a somewhat unique situation for ACS

journals, since Organic Letters began in 1999, in competition with Tetrahedron Letters, and was priced by the ACS to immediately recoup its start-up costs.

The % increase in cost/page completely reverses the order we just saw in the % increases in subscription costs. It is also interesting to note that if TL were priced at \$0.45/page (the value for SynLett), its subscription price would be only \$4349 instead of over \$11K.

Normalization of the C/P/IP produces a very meaningful comparison between different journals(5). Setting OL & SL = 1, results in TL having a value of ~ 3, which suggests that Organic Letters & SynLett are more cost effective by a factor of 3. For Tetrahedron Letters to match their cost effectiveness, it should have a subscription price of \$3747 instead of over \$11K.

The second comparison is with inorganic chemistry journals(6). Again, the subscription price increases give a very misleading comparison. The % increase in cost/page again completely reverses the order we previously saw in the subscription cost increases. It is also interesting to note that if Polyhedron was priced at \$0.64/page (the value for Dalton Transactions), its subscription price would be only \$2095 instead of nearly \$6700.

Normalization of the Cost/Page/Impact Factor again produces meaningful comparisons(7). Setting Inorganic Chemistry = 1, results in Dalton Transactions = 2.4 and Polyhedron = 14.2, which suggests that Inorganic Chemistry & Dalton Transactions are more cost effective by factors of ~14 and ~6 respectively. For Polyhedron to match even the cost effectiveness of Dalton Transactions, it would have a subscription price of \$1116 vs \$6697.

This analysis seemed to really hit home and has apparently provided faculty members with at least some of the data they need to make rational decisions regarding journal subscriptions. Fortunately, our faculty are a very reasonable group of individuals that are influenced by hard data. It also helps that we have an excellent document delivery service, that is often used even for in-house materials. I guess time is sometimes more important than exercise, which they would get by walking a short distance to the library.

## 1. SELECTIVE JOURNAL COST COMPARISON

JOURNAL TITLE	1994	2000	2002
ACS COMBO*		\$33,436	\$40,279
ACIE**	\$872	\$2,297	\$3,022
BBA***	\$7,322	\$11,362	\$12,915
J. CHROM.***	\$5,903	\$11,109	\$12,628
JEC***	\$4,864	\$8,526	\$9,100
JMS+THEO***	\$4,904	\$10,110	\$11,491
RSC PKG A****		\$10,217	\$10,519
TET. COMBO*****		\$23,061	\$25,758

\*ACS COMBO ( 'site wide' online - 1996+)

\*\*ACIE ('one seat' online - 1998+)

\*\*\* ELSEVIER (one year 'rolling window')

\*\*\*\*RSC PKG A ('site wide' online - 1997+)

\*\*\*\*\*TET. COMBO (site wide online -1998+).

## 2. Possible exchange rate profiteering.

In addition to the extremely high prices for commercially published European journals, subscribers outside of Europe may not subscribe at the converted EURO rate.

Comparing Elsevier's US\$ subscription rates with their Euro subscription rates for European subscribers, indicates an additional 'exchange rate' profit of 12.5% in 2001 and 25% in 2002 for many titles.

A similar analysis of Angew. Chem. Int. Ed. (Wiley-VCH) indicates an 'exchange rate' profit of 33% in 2001 and 48% in 2002.

In sharp contrast, the Royal Society of Chemistry only raised their subscription price 3% in 2001 and froze their 2002 subscription prices at the 2001 level, because of the decrease in the value of the GB pound vs the US\$.

### 3. Selective Journal Cost Comparison

JOURNAL	2000	2005	%+
PERKIN/OBC	\$3378	\$3960	17%
DALTON TRANS.	\$2295	\$2965	29%
TET. LETT.	\$8859	\$11595	31%
POLYHEDRON	\$5146	\$7049	37%
J. ORGMET. CH.	\$8103	\$11099	37%
TET. + T:ASYMM.	\$11624	\$15920	37%
INORG. CHEM.	\$2049	\$2995	46%
ORGANIC LETT.	\$2645	\$3865	46%
ORGANOMET.	\$1930	\$2822	46%
SYNTHESIS	\$1097	\$1994	84%
SYNLETT	\$ 748	\$1456	95%

#### 4. Cost/Page and Cost/Page/Impact Factor Comparison (organic journals)

JOURNAL	2000	2004	%+
TET. LETT.	\$8859	\$11017	24%
Pages	10361	9665	
Cost/Page	\$0.85	\$1.14	33%
Impact Factor	2.4	2.5	
C/P/IP	.36	.46	28%
SYNLETT	\$748	\$1286	72%
Pages	1859	2839	
Cost/Page	\$0.40	\$0.45	12.5%
Impact Factor	2.8	2.7	
C/P/IP	.14	.17	21%
ORGANIC LETT.	\$2645	\$3589	36%
Pages	4269	5033	
Cost/Page	\$0.62	\$0.71	14.5%
Impact Factor	3.4	4.2	
C/P/IP	.18	.17	-6%

#### 5. Normalization of 2004 DATA (Organic journals)

JOURNAL	C/P/IP	Normalized C/P/IP
ORGANIC LETTERS	.17	1
SYNLETT	.17	1
TETRAHEDRON LETT.	.50	2.7

For Tetrahedron Letters to match the cost effectiveness of Organic Letters and SynLett, Tetrahedron Letters should have a subscription price of \$4080 instead of over \$11K.

## 6. Cost/Page and Cost/Page/Impact Factor Comparison (inorganic journals)

JOURNAL	2000	2004	%+
DALTON TRANS.	\$2295	\$2698	17.5%
Pages	4701	4208	
Cost/Page	\$0.49	\$0.64	31%
Impact Factor	2.5	2.9	
C/P/IP	0.195	0.22	13%
POLYHEDRON	\$5146	\$6697	30%
Pages	2770	3273	
Cost/Page	\$1.86	\$2.05	10%
Impact Factor	1.0	1.6	
C/P/IP	1.85	1.28	-31%
INORG. CHEM.	\$2049	\$2781	36%
Pages	6145	8657	
Cost/Page	\$0.33	\$0.32	-3%
Impact Factor	2.7	3.4	
C/P/IP	0.12	0.09	-25%

## 7. Normalization of 2004 DATA (inorganic journals)

JOURNAL	C/P/IP	Normalized C/P/IP
INORGANIC CHEMISTRY	.09	1
DALTON TRANSACTION	.22	2.4
POLYHEDRON	1.28	14.2

If POLYHEDRON was as cost effective as Dalton Transactions, it's subscription price would only be \$1116 instead of \$6697.